Domain and Range

Find the ranges for each of these functions and their domains:

(a) $f(x) = 5x + 1 \quad x = \{1, 2, 3\}$

(b) $g(x) = x^2 - 3 \quad x = \{3, 4, 5\}$

(c) $h(x) = \sqrt{2x + 1} \quad x = \{2, 4, 12\}$

The domain is $\{1, 2, 3, 4\}$. Find the ranges of these functions:

(d) $f: x \to x + 9$

(e) $g: x \to 2x^2$

(f) $h: x \to \frac{x}{x+1}$

What value of x must be excluded from the domains for the following functions?

(g) $f(x) = \frac{3}{x}$

(h) $g(x) = \frac{x}{x-2}$

(i) $h(x) = \frac{x+1}{x+2}$

What values of x must be excluded from the domains for the following functions?

(j) $f: x \to \sqrt{x}$

(k) $g: x \to \sqrt{x - 3}$

(l) $h: x \to \sqrt{x + 2}$

What values of x must be excluded from the domains for the following functions?

(m) $f(x) = \frac{2}{x-1} + \frac{3}{x+5}$

(n) $g(x) = \sqrt{2x - 1}$

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